The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SALAH AIT-MOKHTAR,
JEAN-PIERRE CHANOD and ERIC GAUSSIER

Appeal No. 2005-0274
Application No. 09/738,319

ON BRIEF

Before THOMAS, KRASS and LEVY, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-8, and 10-20. Claim 9 has been cancelled and forms no part of this appeal.

The invention is directed to the generation of normalized representations of strings, e.g., sentences, and for providing translation information for translating a string from a first language to a second language.

Representative independent claim 1 is reproduced as follows:

1. A method for normalizing input strings, the method comprising the steps of:

(a) receiving the input strings;

(b) linguistically analyzing the input strings to generate a first representation of each of the input strings; each of the first representations including linguistic information;

(c) skeletising each of the first representations to generate a corresponding second representation for each of the input strings; said skeletising step replacing the linguistic information with abstract variables in each of the second representations; and

(d) storing the second representation as normalized representations of the input strings.

The examiner relies on the following references:

Liddy et al. (Liddy) 6,006,221 Dec. 21, 1999

Collins, "Discriminative Reranking for Natural Language Parsing", Proc. 17th International Conf. on Machine Learning, pp. 175-182 (July 2000).

Claims 1-8, 10-18 and 20 stand rejected under 35 U.S.C. §102 (e) as anticipated by Liddy.

Claim 19 stands rejected under 35 U.S.C. §103 as unpatentable over Liddy in view of Collins.

Reference is made to the briefs and answer for the respective positions of appellants and the examiner.

OPINION

Turning, first, to the rejection under 35 U.S.C. §102 (e), a rejection for anticipation under section 102 requires that the four corners of a single prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation. In re Paulsen, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

With regard to independent claims 1 and 15, it is the examiner's position that Liddy discloses, in a multilingual document retrieval method, entering a query or document for processing (in Figures 1 and 2, at elements 70, 110, and at column 2, lines 42-65); corresponding to the receipt of input strings, and subjecting each document to a sequence of processing steps where one of the initial steps includes part of speech tagging (citing column 2, lines 55-60, and column 7, lines 21-46), which corresponds to linguistically analyzing the input strings to generate a first representation of each of the input strings, each of the first representations including linguistic information; and generating both conceptual and term-based alternative representations of the documents and queries with relevant information extracted from the documents and indexed (citing column 6, lines 15-20, 63 through column 7, line 5,

and Figures 1 and 2), which corresponds to skeletising each of the first representations to generate a corresponding second representation for each of the input strings, the skeletising step replacing the linguistic information with abstract variables in each of the second representations; and storing the processed documents in a database (column 6, lines 25-32 and element 60 in Figure 1), which corresponds to storing the second representation as normalized representations of the input strings [see page 4 of the answer].

Appellants argue that Liddy fails to disclose the claimed "skeletising" step wherein each of the first representations generates a corresponding second representation for each of the input strings, and wherein this step replaces the linguistic information with abstract variables in each of the second representations.

The examiner counters that Liddy does disclose the replacement of linguistic information with other information by indicating, in Figure 2, a series of processing steps starting with the input of linguistic information and ending with the generation of the monolingual concept vector MCVG where the final representation is used for searches (answer-page 11).

With regard to appellants' argument that Liddy does not disclose replacing linguistic information with an "abstract variable," the examiner asserts that it was "well

known in the art that a variable is an instance of a data type. In this case Liddy produces codes (abstract variables; Fig. 5, far right) of categories or concepts (abstract data types) (i.e., the codes are instances of the concepts)" (answer-page 12).

We agree with appellants.

Liddy generates a conceptual representation of the subject content of a document and that document may undergo additional analysis to provide other representations such as the extraction of certain information (see the abstract of Liddy).

The input of Liddy may be considered an "input string," as claimed. Moreover, one may reasonably say that each such input string is linguistically analyzed to generate a first representation of each input string, where these first representations include "linguistic information," as broadly claimed. However, we do not find any disclosure, or suggestion, in Liddy of the claimed "skeletising each of the first representations to generate a corresponding second representation for each of the input strings; said skeletising step replacing the linguistic information with abstract variables in each of the second representations."

The examiner contends that the generation of both conceptual and term-based alternative representations of the documents and queries with relevant information extracted from the documents and indexed, described by Liddy at column 6, lines 15-20

and column 6, line 63 through column 7, line 5, meets the claim language regarding "skeletising."

In reviewing those portions of Liddy, the reference indicates that analogous processing determines the requirements for document matching and that alternative representations of documents and queries may be both conceptual and term-based. But we find nothing in these recitations indicating that there is any processing of the first representations into second representations wherein the second representations are produced by "replacing the linguistic information with abstract variables in each of the second representations," as required by the instant claims.

In the response to appellants' argument in this regard, the examiner points out that Figure 2 of Liddy indicates a series of processing steps starting with the input of linguistic information and ending with the generation of the monolingual concept vector MCVG where the final representation is used for searches (answer-page 11). Merely because Liddy starts with an input of linguistic information and ends with a monolingual concept vector is no evidence that this resulting monolingual concept vector (assuming the examiner intends for this monolingual concept vector to be the claimed "second representation"), is such that the linguistic information is *replaced with abstract variables* in each of the monolingual concept vectors, as claimed.

With regard to the claimed "abstract variable," the examiner contends that it is "well known in the art that a variable is an instance of a data type" and Liddy produces codes of categories or concepts, wherein the codes are abstract variables and concepts are abstract data types, the codes being instances of the concepts (answer-page 12). Appellants take the opposite view, i.e., that the codes of Liddy are fixed dimension vectors, not abstract variables. Moreover, appellants contend that not only is there no disclosure in Liddy that the concept codes are abstract variables, but to interpret them to be abstract variables would render Liddy inoperable for its intended purpose (reply brief-page 4).

Our review of Liddy does disclose, at column 15, lines 5-6, that module MCVG 190 produces a "fixed-dimension vector representation of the concept-level contents of the text." Thus, it would appear that appellants' position is supported by the disclosure of Liddy while the examiner has offered nothing to convince us that the codes of Liddy constitute "abstract variables." Accordingly, since appellants have pointed to a portion of Liddy which supports the position that Liddy does not disclose the claimed step of "replacing the linguistic information with abstract variables in each of the second representations," while the examiner's contrary position can only be supported by speculation, we will not sustain the rejection of claims 1-8, 10-18, and 20 under 35 U.S.C. §102 (e).

In addition, we will not sustain the rejection of claim 19 under 35 U.S.C. §103, as we do not find that Collins provides for the deficiencies of Liddy.

Accordingly, the examiner's decision is reversed.

REVERSED

JAMES D. THOMAS)
Administrative Patent Judge)
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ERROL A. KRASS) BOARD OF PATENT
Administrative Patent Judge) APPEALS
) AND
) INTERFERENCES
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